



# Rationale for the Development and Expansion of the Existing ICD9-CM Codes Related to Oral Health

December 5, 2003

Baltimore MD



**UIC College  
of Dentistry**

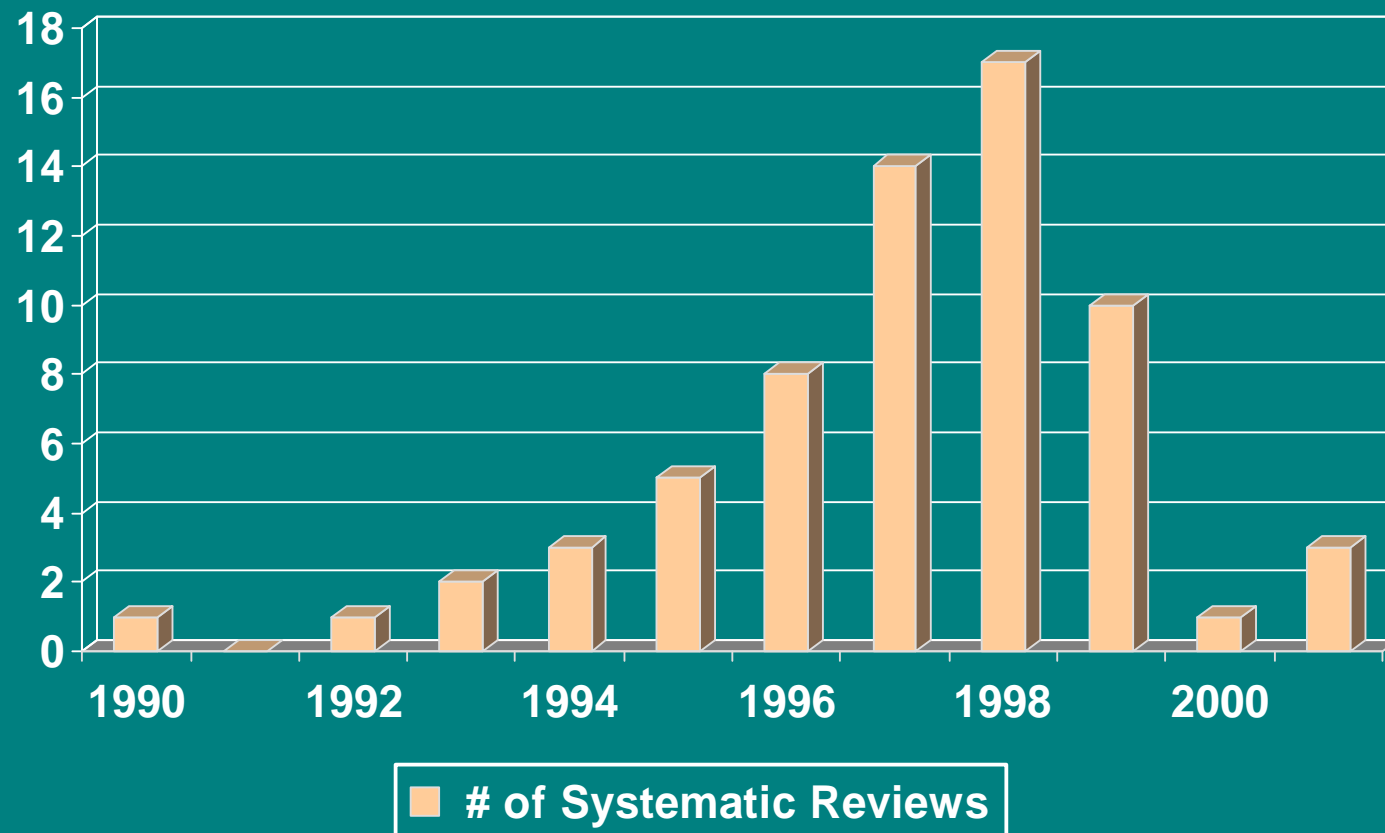
# Outline

- **Introduction**
- Oral Health and Diagnostic Coding
- Research and Educational Initiatives at the University of Illinois at Chicago College of Dentistry
- ICD9-CM and Oral Health Care
- Conclusion

# Introduction

- Clinical oral health research has focused on narrowly defined efforts designed to answer specific questions
- No systematic methodology has been established that will allow the transparent integration of clinical research into the patient care, dental practice, and educational environment

# Systematic Reviews in Dentistry



**The assessment of systematic reviews in dentistry**  
**Glenny AM, Esposito M, Coulthard P, Worthington HV**  
Eur J Oral Sci. 2003 Apr;111(2):85-92



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# The Need for Diagnostic Coding in Oral Health Care

- There is no diagnostic code system available that provides a comprehensive basis adequate to meet oral health care diagnostic needs
- The need for a comprehensive diagnostic code base has become critical with the advent of the digital age and EPR

# The Need for Diagnostic Coding in Oral Health Care

- A nation-wide/international use of the codes could provide information helpful in understanding the oral health, demonstrate improvements in oral health, track best practices, and identify and monitor the progress of different segments of the population

# Diagnostic Coding + Oral Health Research

- Provide access to more complete clinical documentation and support aggregation of data across study sites and investigators, enhancing the population research base and supporting outcomes research
- Standardize the process of reporting disease prevalence and incidence creating more reliable measures of societal patterns of disease

# Research of Importance to the Practicing Dentist

## *2003 ADA Research Agenda*

1. Issues Related to the Science of Dentistry
2. Economic, Environmental, Social and Management Issues Related to the Practice of Dentistry
3. Issues of Information Transfer
4. Research Models
  - **Promote the concept of evidence-based research models**

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## **Mission Statement**

**Develop a curriculum that is  
evidence based and supported by  
technology**

- The introduction, installation and investment in a comprehensive Electronic Patient Record (EPR), including some 400 computers in all clinical operatories, coupled with a clinical management program, provide an opportunity to collect normative, diagnostic and patient outcome data

- The new COD clinical model of patient care is suited for:
  1. The establishment of a global research environment
  2. The application of the EPR to clinical research

# **Integrating Dental Science and Practice: The Development of a New Patient Care Research Environment**

Dr. S. Campbell

Dr. K. Knoernschild

Dr. J. Zarb

**Multidisciplinary  
Team**

+

**EPR**

+

**Large, diverse  
patient  
community**



1. Normative Data
2. **Diagnostic Codes**
3. Treatment Outcomes



Evidence Based Clinical  
Practice



EB Research



Patients & Dental Community  
Benefit from the Creation  
of a  
Broad Evidence Base

- Educate Faculty & Students  
in Clinical Informatics
- Opportunity to develop  
PBRN



- Committed to developing a dental educational curriculum that is diagnosis driven
- The only dental school in the third largest city in the US providing service to more than 100,000 patient visits per year
- Need for clinical studies that have a common, transparent and systematic diagnosis. Achieved by employing the evidence-based process to assemble, organize and synthesize clinical research in a rigorous and transparent fashion. This body of evidence, coupled with clinical expertise, will lead to the creation of guidelines designed to enhance clinical judgment and decision-making



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# ICD9-CM and Oral Health Care

- Existing codes (520-529) have not evolved enough and do not reflect the nature of dental practice today or our educational and research needs
- Minor modifications were introduced in 2001
- Advent of the EPR demands a comprehensive revision of the existing codes

# ICD9-CM and Oral Health Care

- Addressed the codes that relate to Restorative Dentistry and Prosthodontics – 521, 523, 524, 525 and 528
- Support and endorsement of the American College of Prosthodontists, the umbrella organization for the Specialty of Prosthodontics

# Oral Health U.S., 2002

The Dental, Oral and Craniofacial Data Resource Center  
The National Institute of Dental and Craniofacial Research  
The National Institutes of Health  
and  
Division of Oral Health  
National Center for Chronic Disease Prevention and Health Promotion  
The Centers for Disease Control and Prevention  
U. S. Department of Health and Human Services

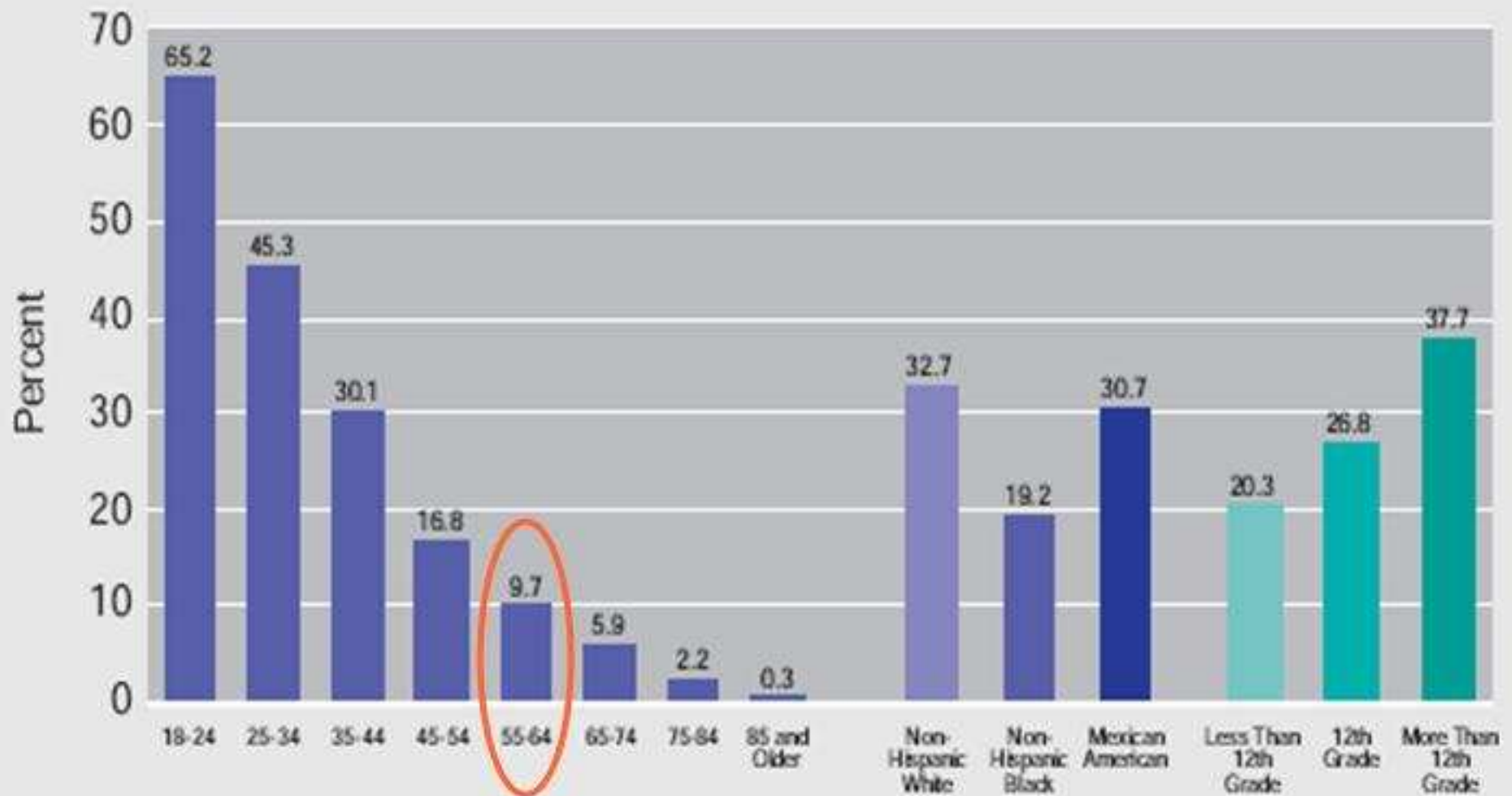
September 2002

# Completely Dentate

- A full dentition in adults is defined as the presence of all natural teeth, not including third molars
- Approximately 30% of the U.S. population aged 18 and older were fully dentate in the Third National Health and Nutrition Examination Survey (NHANES III) 1988-1994 (Marcus et al., 1996)

Third National Health and Nutrition Examination Survey (NHANES III) 1988-1994, National Center for Health Statistics, Centers for Disease Control and Prevention and the 1999 Behavioral Risk Factor Surveillance System (BRFSS), Centers for Disease Control and Prevention. NHANES III used clinical exams while BRFSS contains self-reported data.

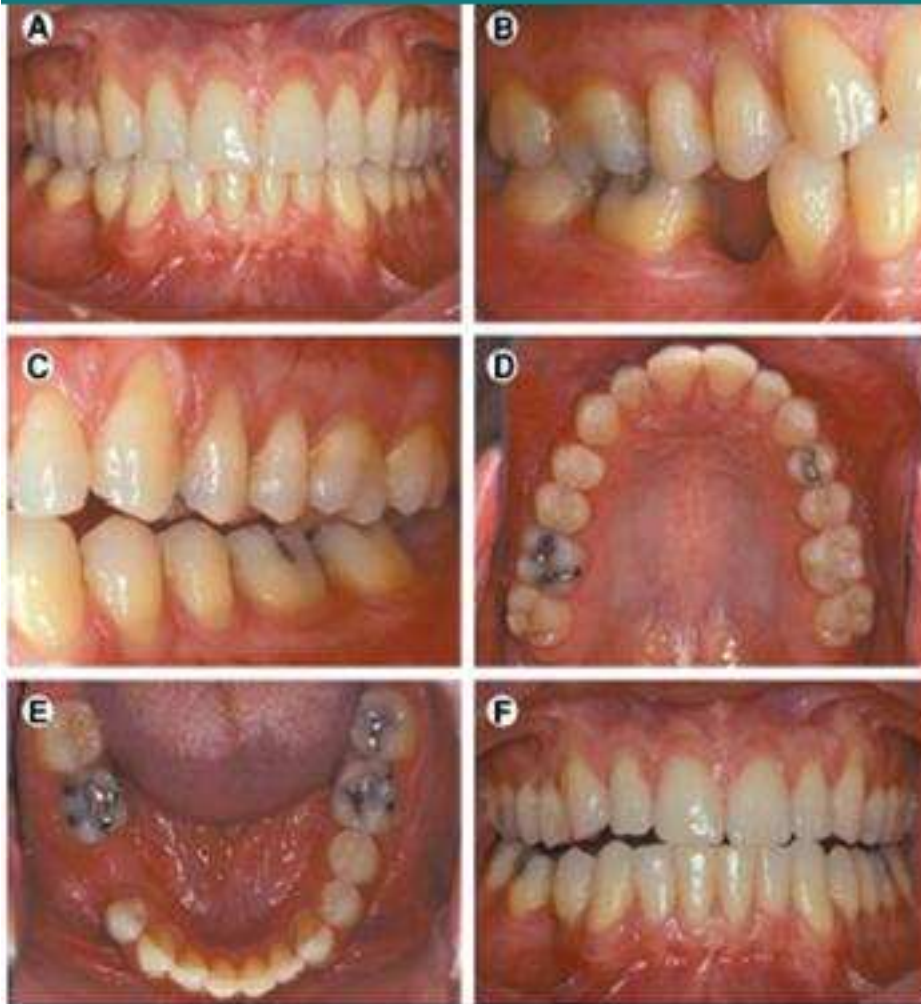
## Percentage of adults aged 18 and older with full dentition by demographic variables



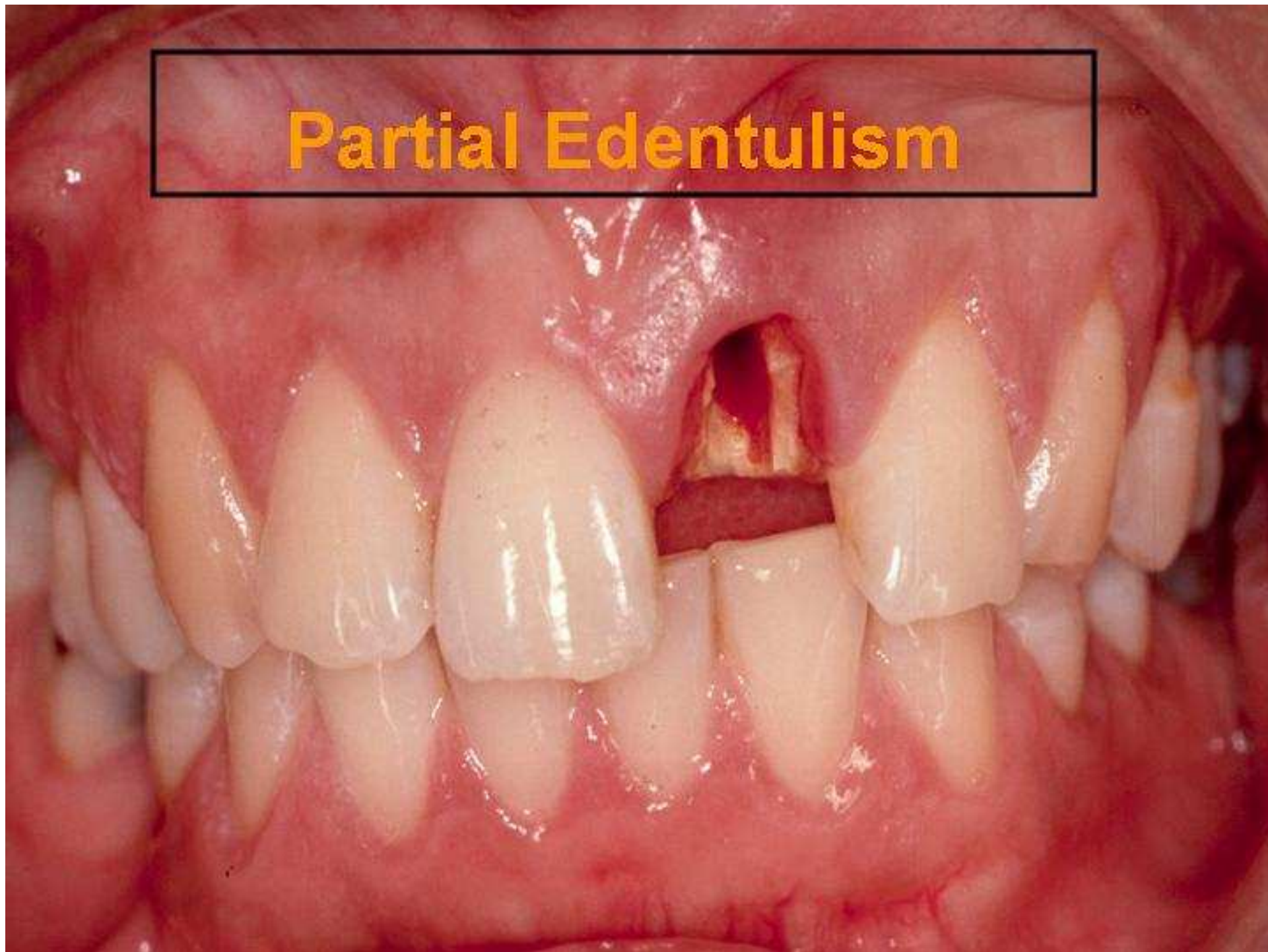
# Completely Dentate



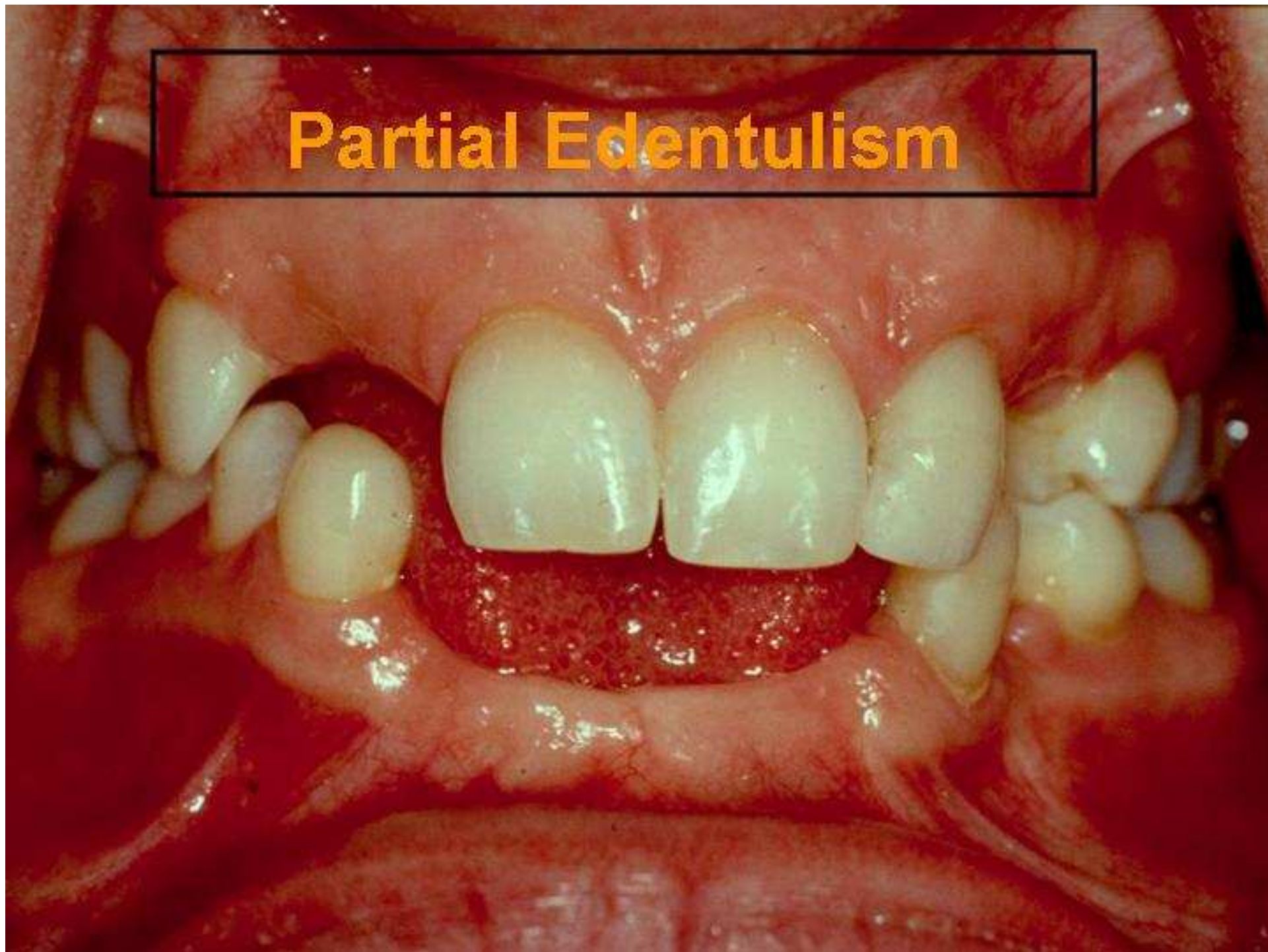
# Partial Edentulism



# Partial Edentulism



# Partial Edentulism



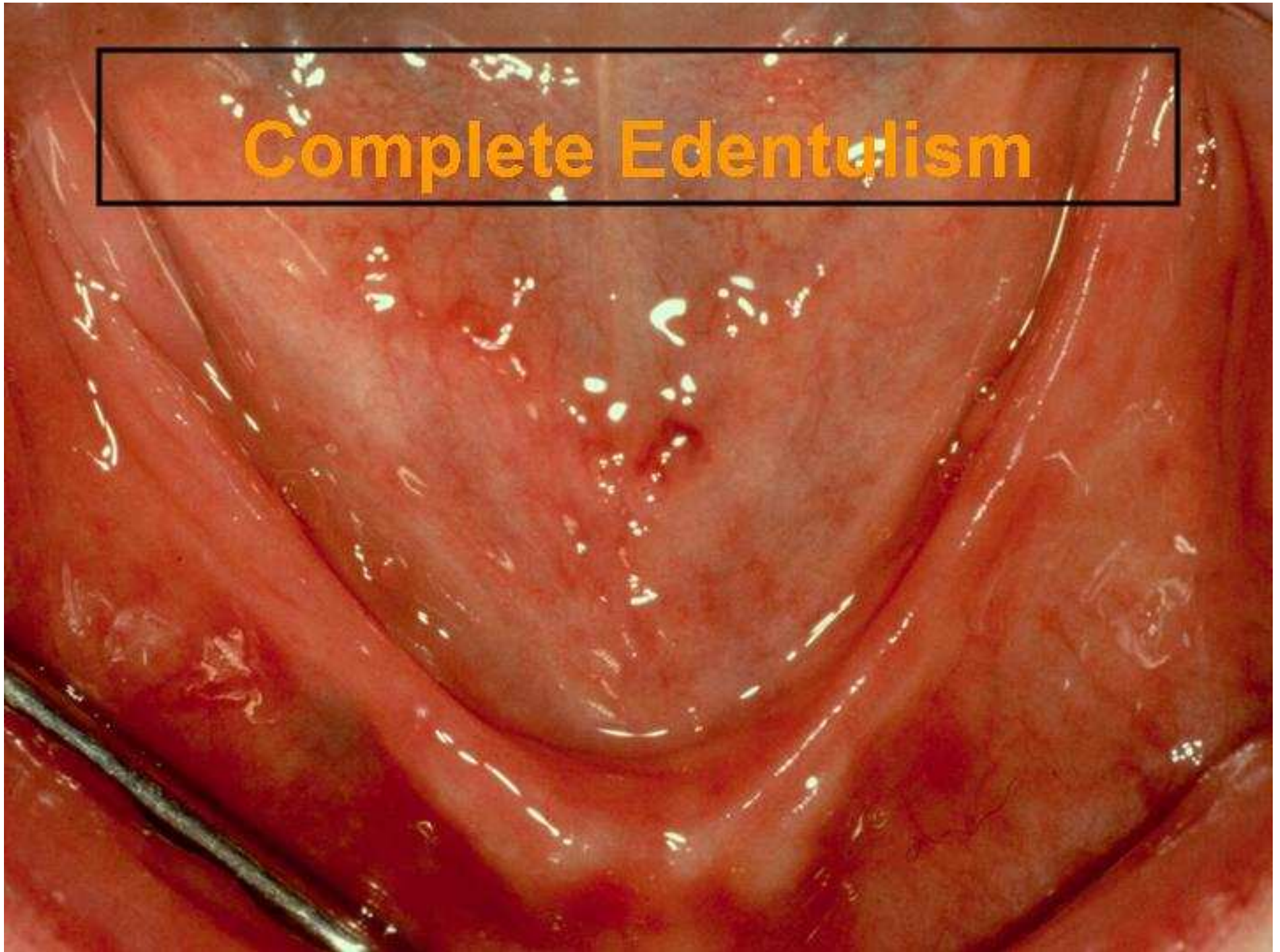
# Complete Edentulism

- Edentulism, defined as total tooth loss, is more prevalent among persons with less than a high school education, those without dental insurance, non-Hispanic blacks, and current everyday smokers (CDC, 1999).
- Between the 1950s and the early 1990s the prevalence of edentulism in the United States decreased from 50% to 42% among people aged 65 and older, from 28% to 11% for 45- to 64-year-olds, and from 5% to 2% for persons 18 to 44 years old (Oliver & Brown, 1993)

1998 National Health Interview Survey, National Center for Health Statistics, and the 1999 Behavioral Risk Factor Surveillance System, CDC



# Complete Edentulism



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# Concluding Remarks

- The codes being proposed are part of normal diagnostic data collection that occurs for all patients, meeting with the existing standard of care in dentistry
- All of the proposed changes are within the scope and conventions of the existing classification
- By adopting these codes into the public domain, dental educators, researchers and clinicians will be able to contribute significantly to the body of evidence

# Acknowledgements

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